



# **Armed Forces College of Medicine AFCM**



Pleura

# **Parotid Gland**

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**Ass. Prof of Anatomy**

## **INTENDED LEARNING OBJECTIVES (ILO)**



By the end of this lecture the student will be able to:

1. Describe position, shape, surfaces, borders and relations of parotid
2. Describe the course and site of opening of parotid duct
3. Recognize structures inside parotid gland and their clinically related problems
4. Discuss the nerve supply, blood supply and lymphatic drainage of parotid gland

## **Key points**



**1. Anatomical features of parotid gland**

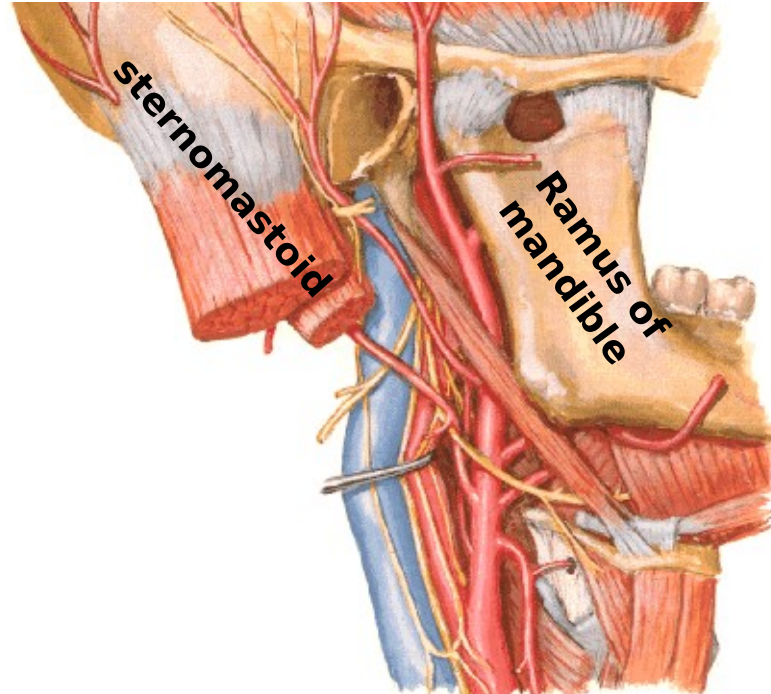
**2. Structures inside parotid gland**

**3. Parotid duct & Innervation of parotid gland**

# Position



- **Wedged** between ramus of mandible & sternomastoid
- Its **upper end** fits into the external acoustic meatus
- Its **lower end** reaches down to the angle of the mandible

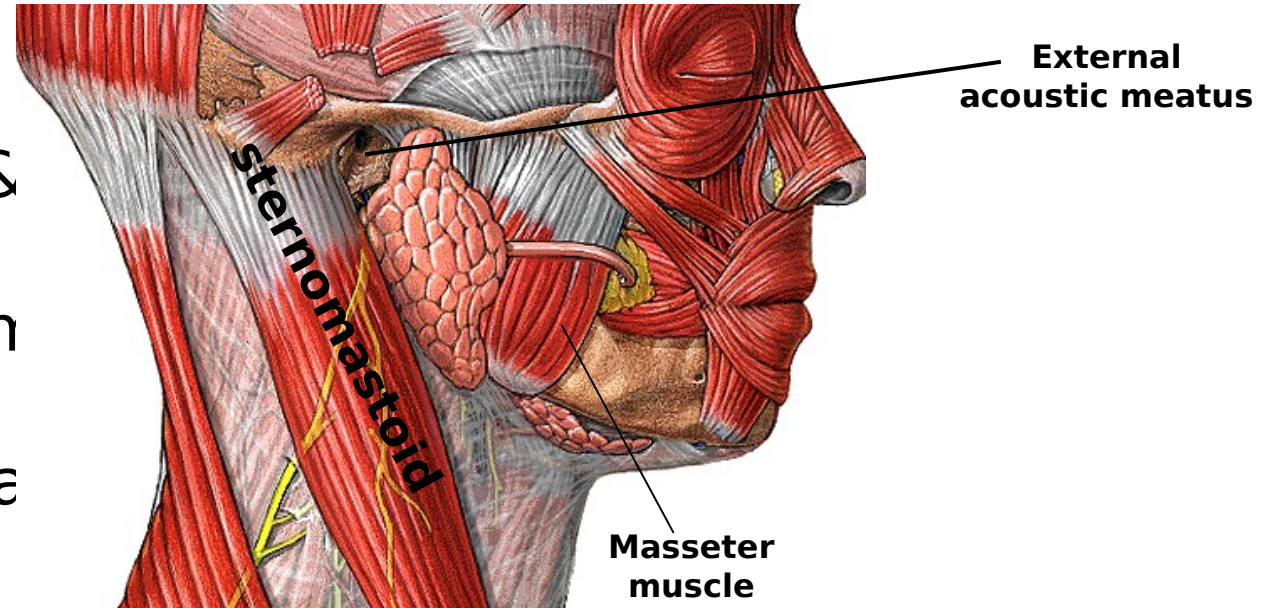


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# Shape



- **Inverted pyramid** has:
- 3 borders:** anterior, posterior & Med.
- 3 surfaces:** superficial, anteron & posteromed.
- 2 ends:** upper (base) & lower (a



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# Relations

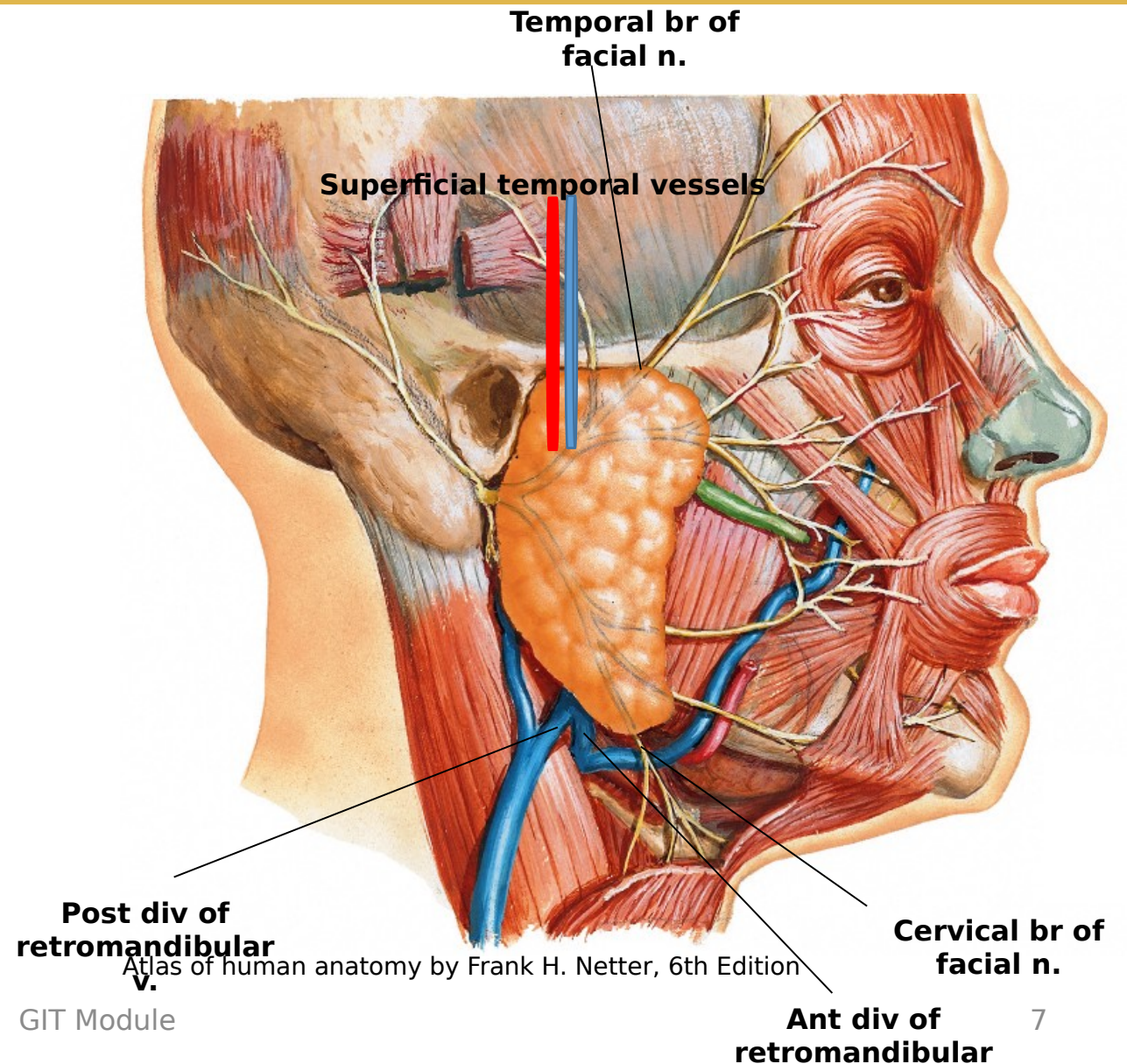


## 2 Ends : (Apex & base)

### 1) Apex:

- Is directed downward
- Through which pass **3 structures:**

cervical branch of facial nerve between 2 divisions of

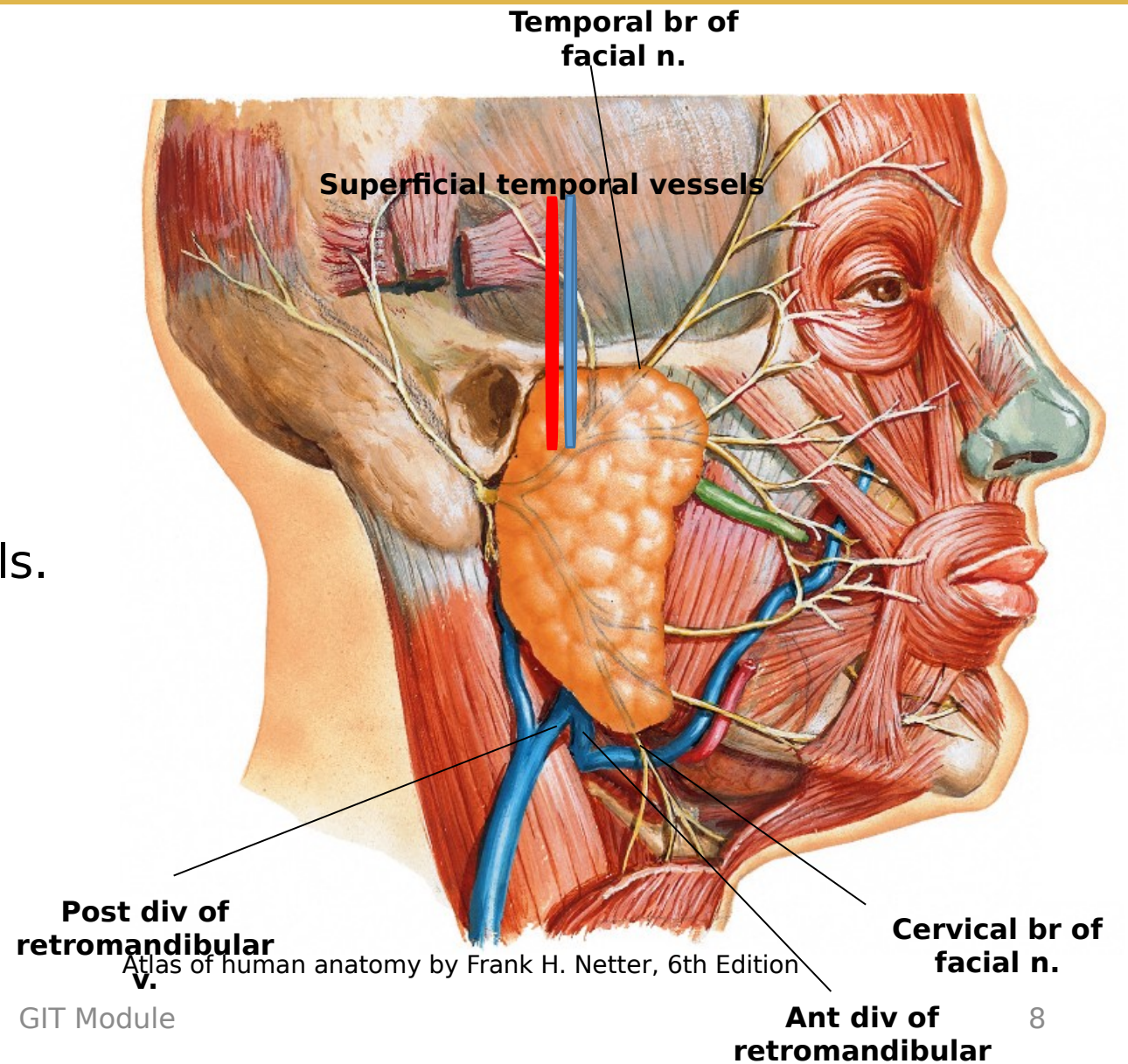


# Relations



## 2)Base:

- around external acoustic meatus
- Through which pass **3 structures**:
  - a.Temporal branch of facial n.
  - b.Surperficial temporal vessels.
  - c.Auriculotemporal n.

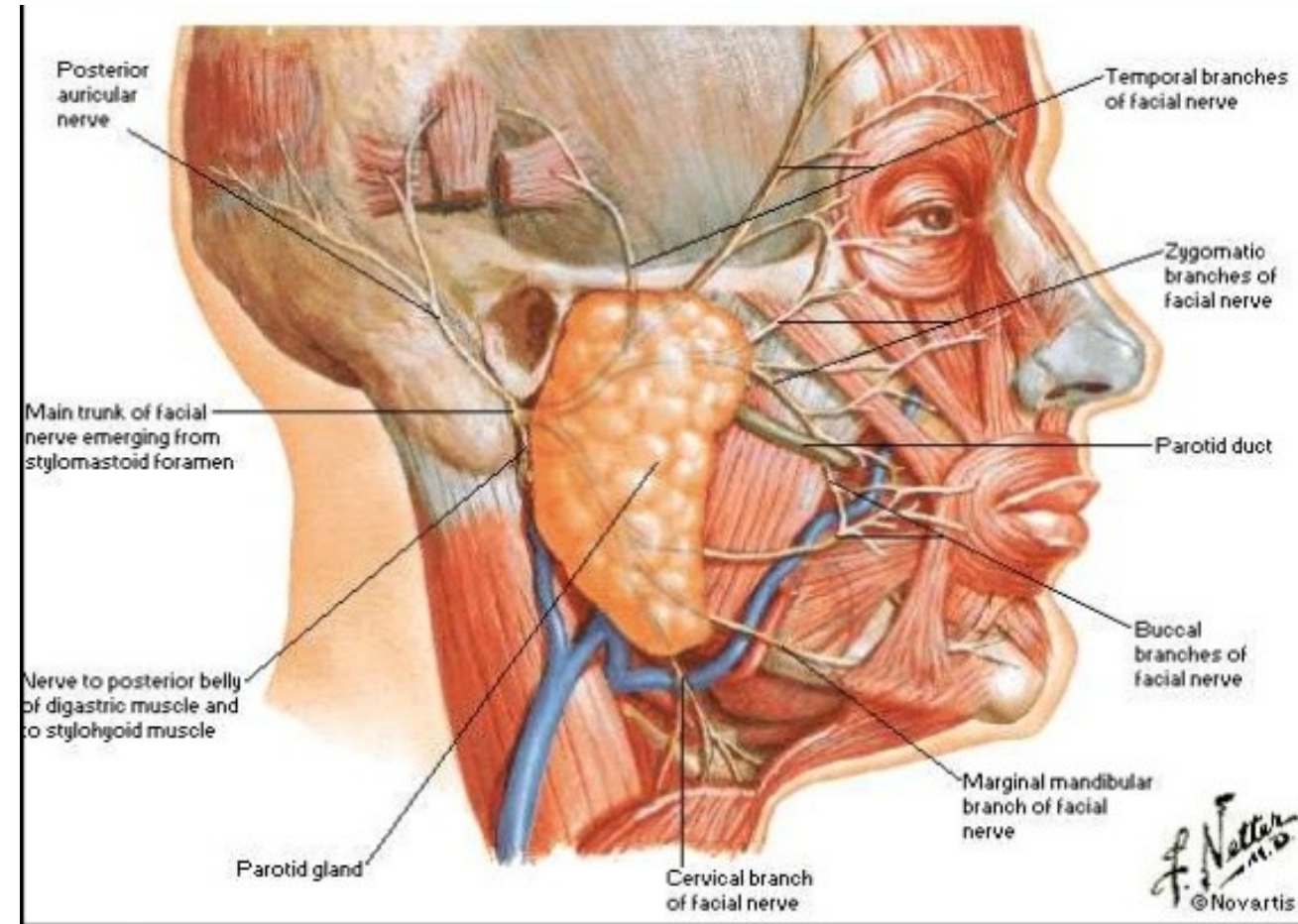




## 3 Borders ( Ant, Post & Med)

### **1)Anterior border:**

- related to masseter
- **5 structures emerge** from above downwards:
  - Zygomatic branch of facial n.
  - Transverse facial artery
  - Parotid duct
  - Buccal branches of facial n.
  - Mandibular branch



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# Relations

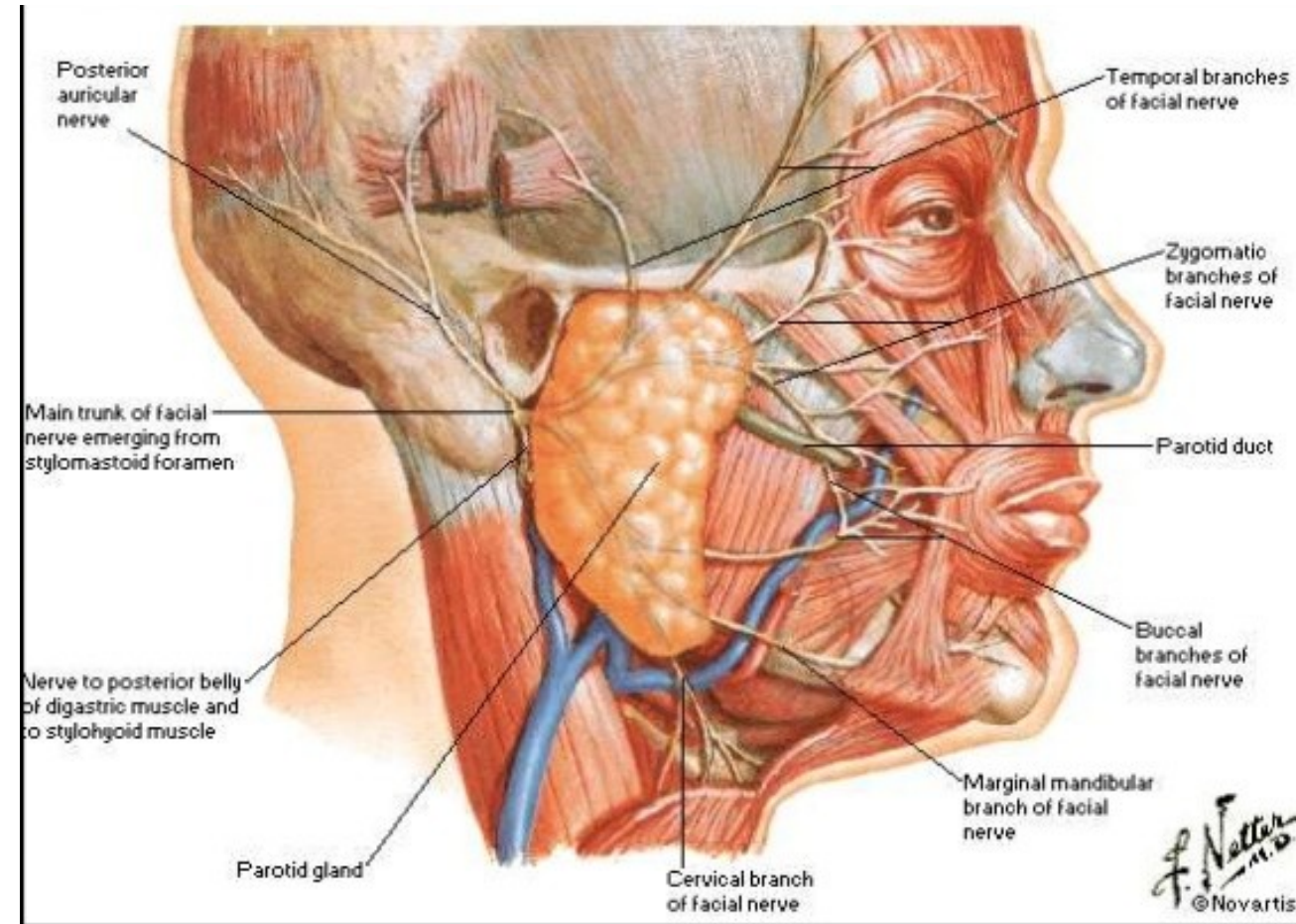


## 2) Posterior border:

- related to sternomastoid

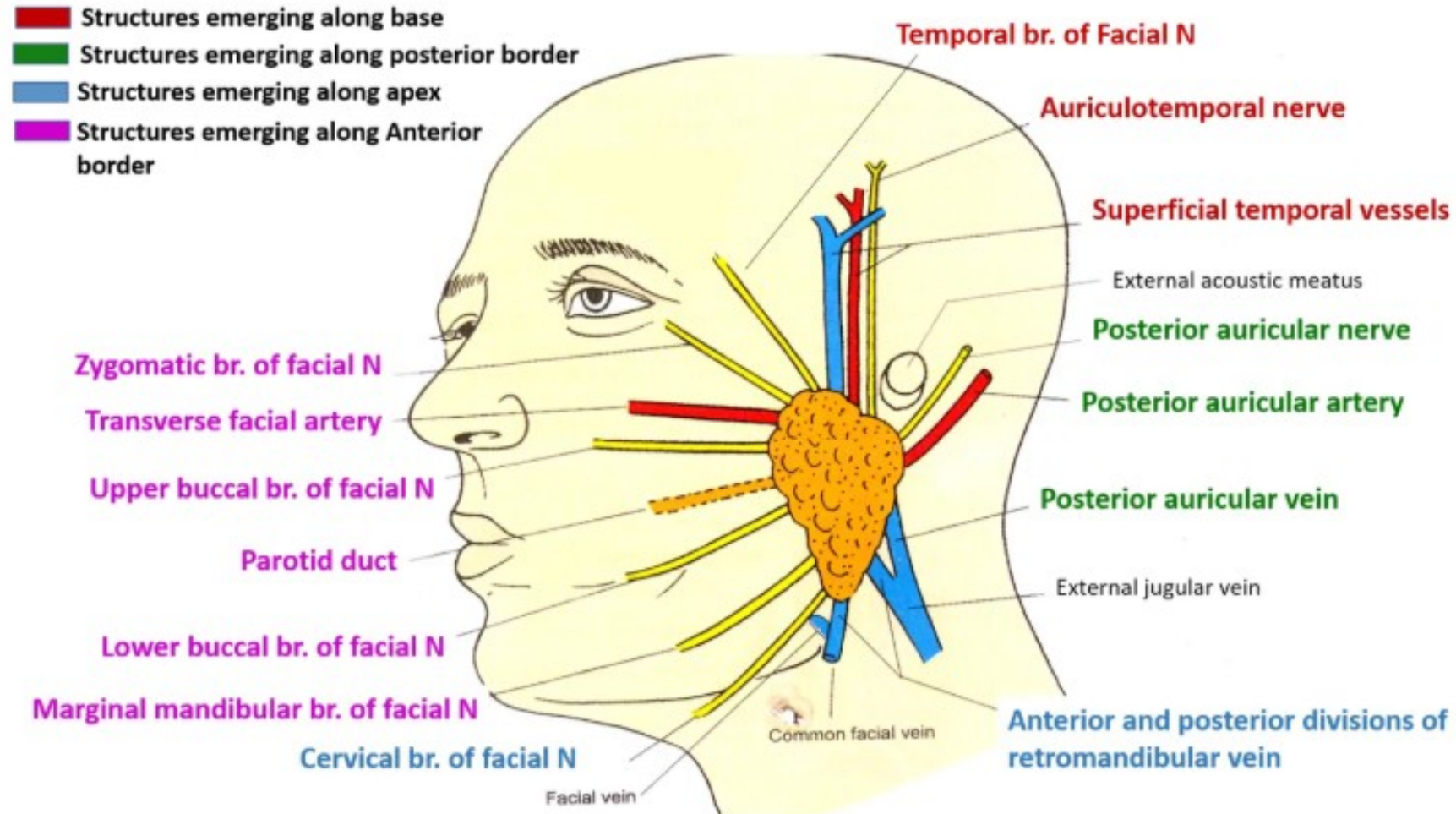
## 3) Medial border:

- related to lateral wall of pharynx



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# Relations



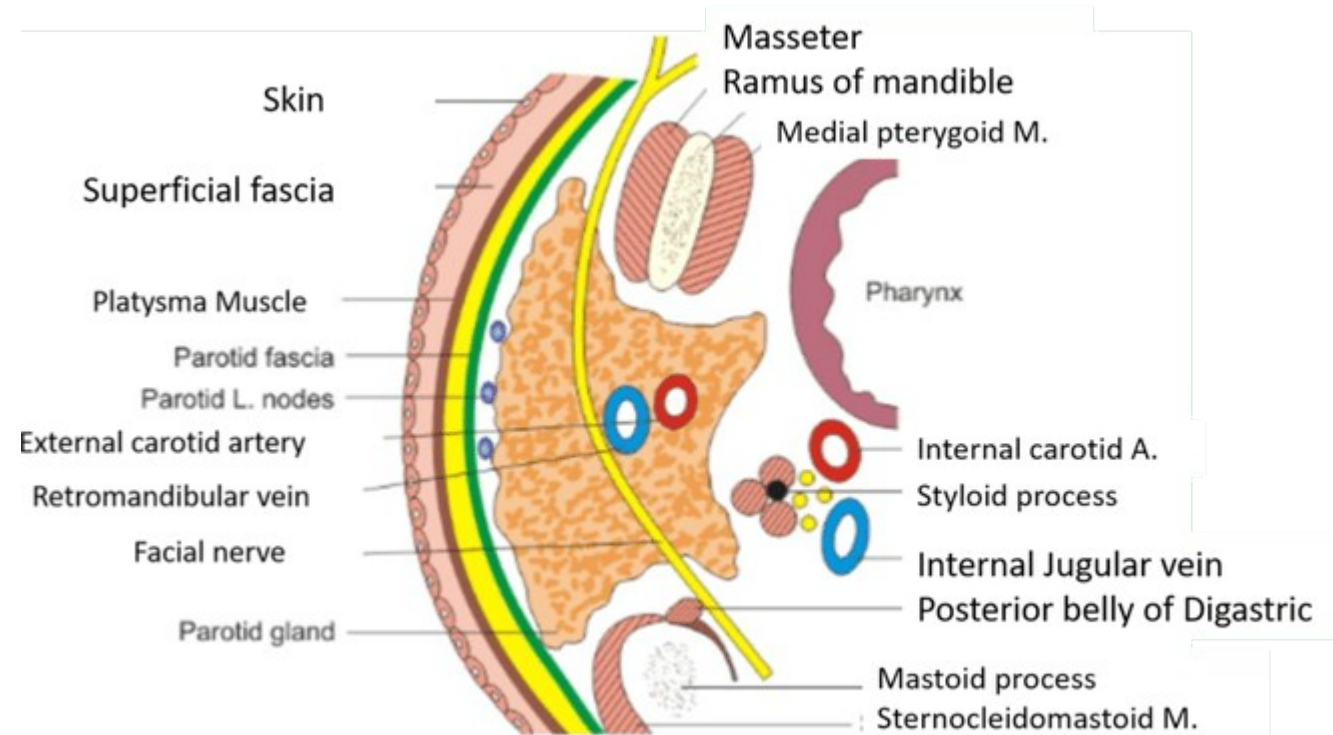
<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gl-and-anatomy/>



## 3 Surfaces

### **1) Superficial (LAT):**

- Skin, superficial fascia, platysma
- Great auricular nerve
- Preauricular lymph nodes (superficial parotid LN)



<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gland-anatomy/>

# Relations



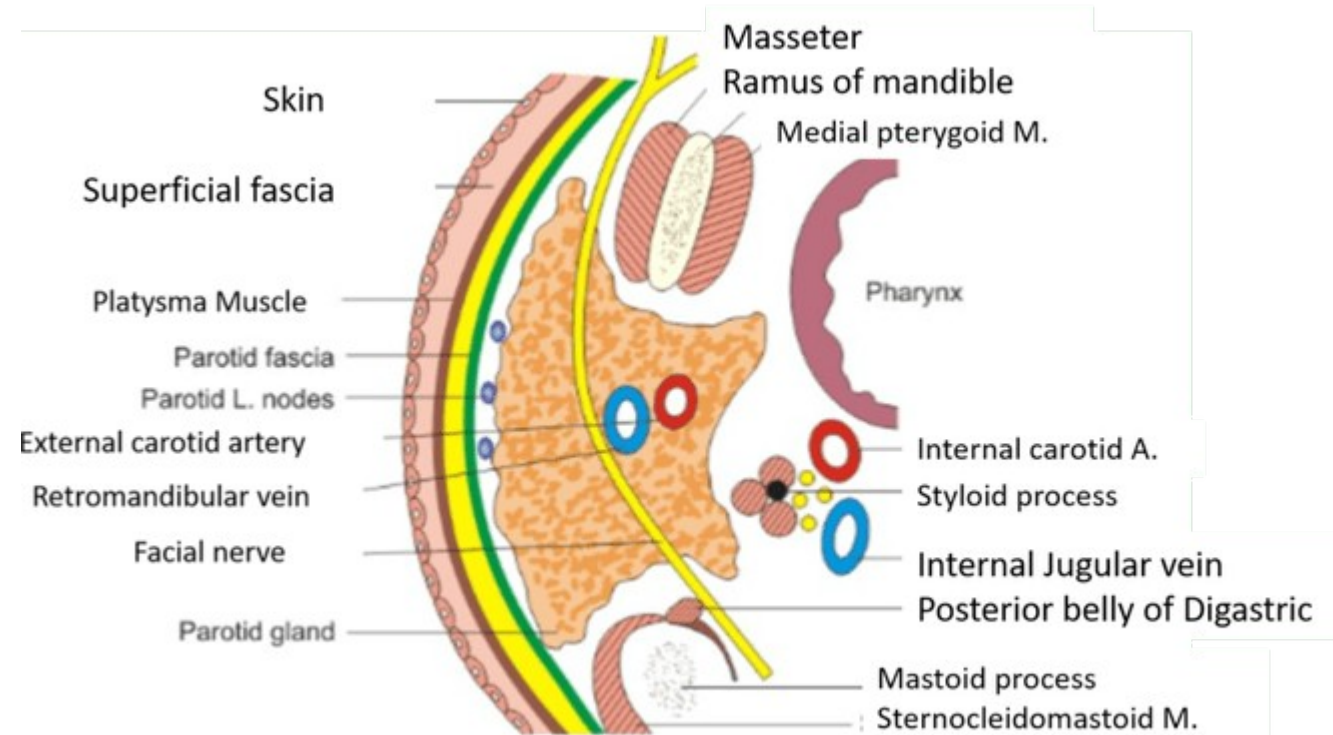
## 2)Anteromedial:

•- **Mandibular** ramus with **Medial pterygoid** (on its inner surface) & **Masseter** (on its outer surface)

## 3) Posteromedial:

**Mastoid process**  
(with 2 ms. attached to it = sternomastoid & post. belly of digastric).

**Styloid process**  
(with 3 ms. attached to it =



<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gland-anatomy/>



## Lecture Quiz



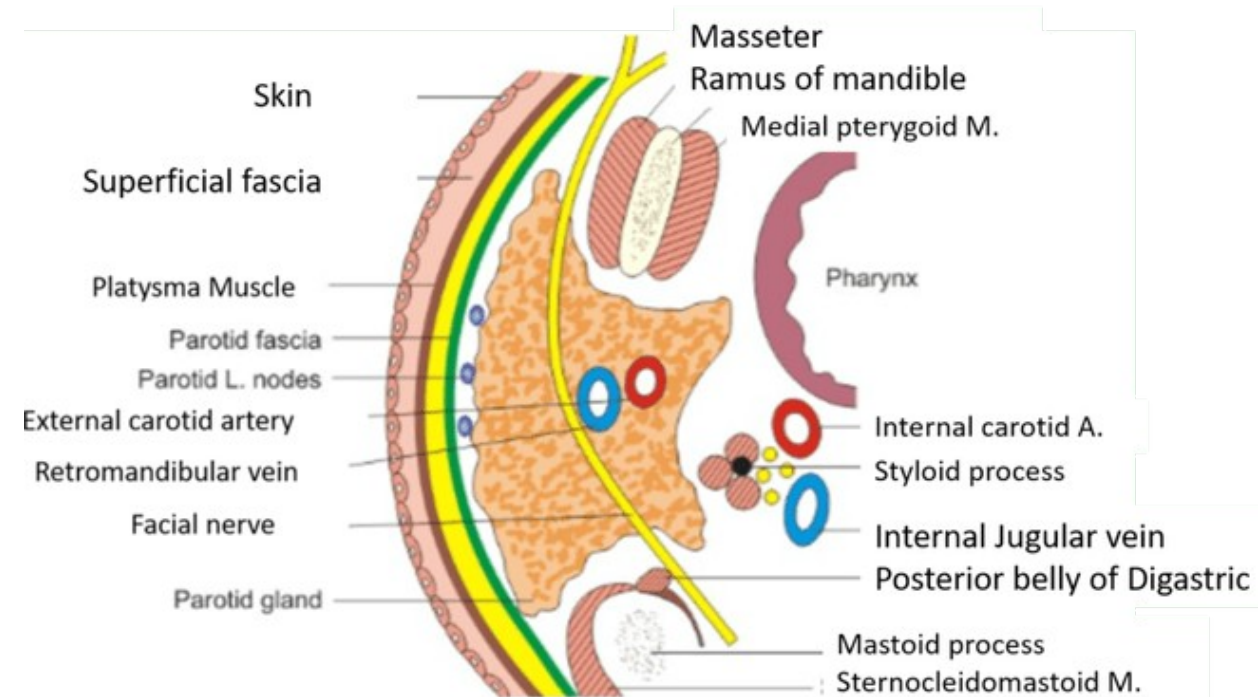
• Which of the following structures emerge from base of parotid gland?

- a) Parotid duct
- b) Auriculotemporal nerve
- c) Zygomatic branch of facial nerve
- d) Ant div of retromandibular vein

# Structures inside the gland



- 1) ECA (most deep)** enters via posteromed surface & divides at level of neck of mandible into maxillary & superficial temporal art.
- 2) Retromandibular Vein:** formed inside the gland by union of maxillary and superficial temporal veins. It divides into ant. and post. div. that leave the gland through its apex.
- 3) Facial Nerve: (most superficial)** enters via posteromed. surface, divides gland into superficial and deep parts. Then forms a plexus called ***Pes Anserinus*** & divides into its 5 terminal branches



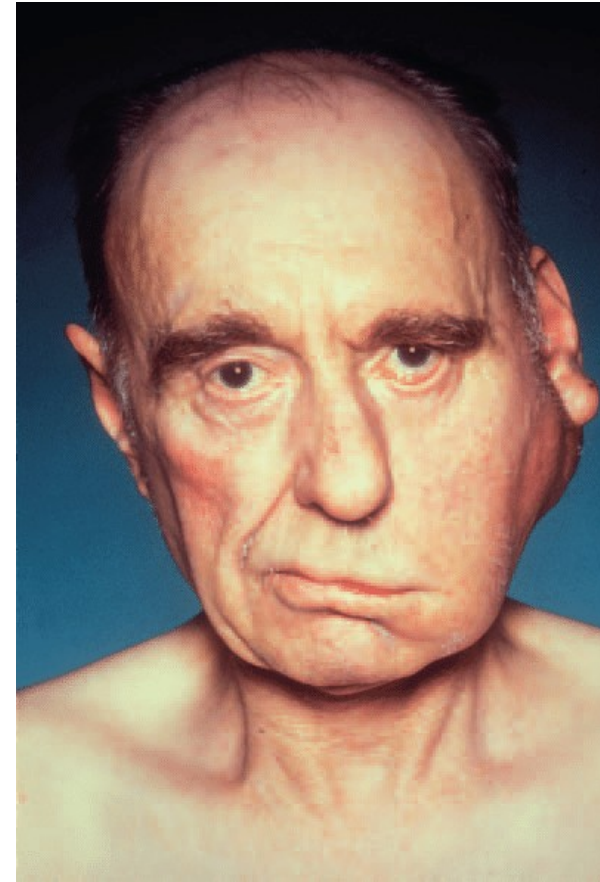
<http://www.anatomyqa.com/anatomy/important-question-and-answers-on-head-and-neck-anatomy/parotid-gland-anatomy/>

- 4) Deep parotid L.N.:** embedded within

# Facial nerve lesion



**A malignant tumour of the parotid is usually highly invasive and involves the facial nerve, causing unilateral facial paralysis.**

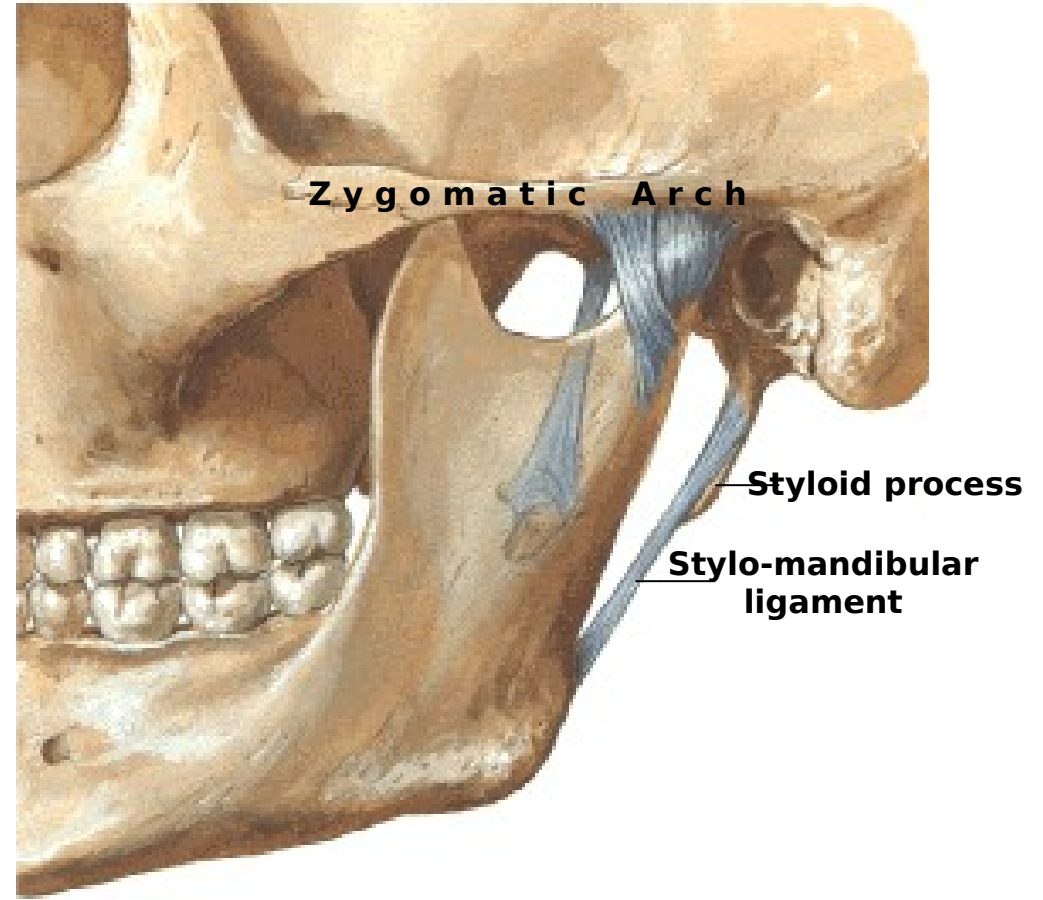


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# Capsule



- The gland is ensheathed by a capsule derived from the **deep cervical fascia**
- The **stylomandibular ligament** separates **parotid gland** from **submandibular gland**



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# Parotid Inflammation



**The parotid gland may become acutely inflamed as a result of bacterial infection from the mouth via the parotid duct or as in mumps.**

**The gland becomes swollen and painful because the fascial capsule is strong and limits the swelling of the gland.**



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## Lecture Quiz

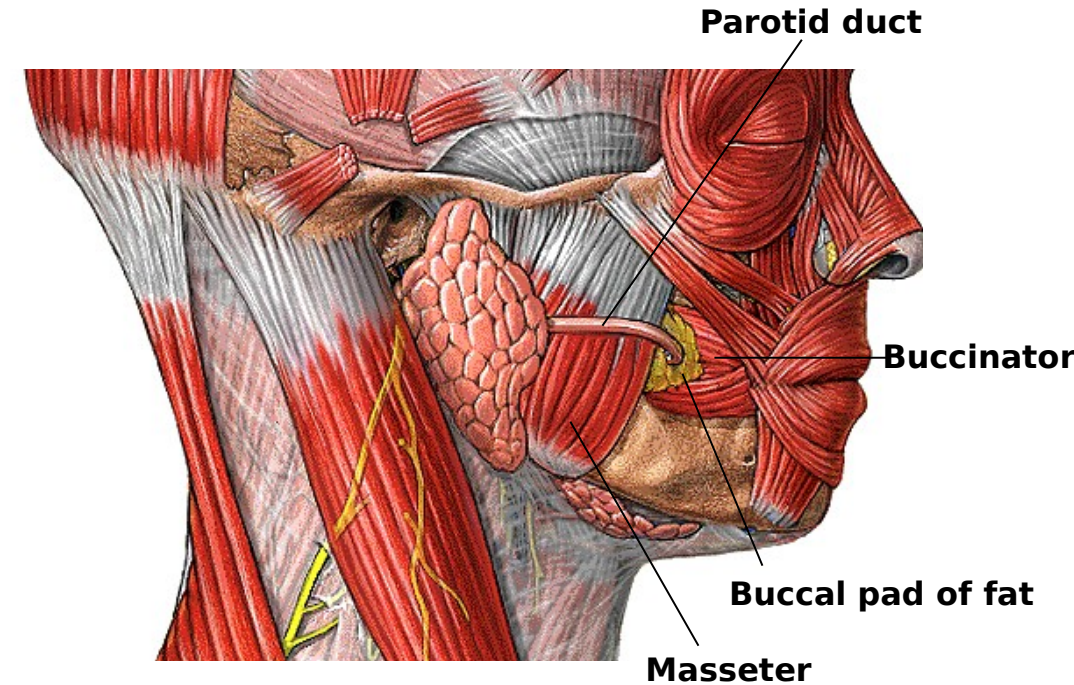
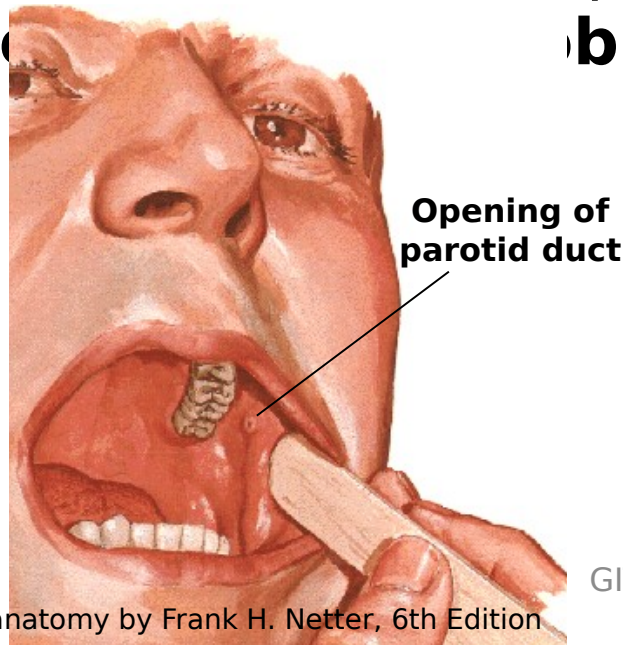


- Which of the following structures is the most superficial structure present inside parotid gland?
- a) Retromandibular vein
- b) Facial nerve
- c) External carotid artery
- d) Maxillary artery

# Parotid duct



- 3 cm long
- Arises from **anterior border** of the gland
- Runs on **masseter** below zygomatic arch, then **pierce (4B) buccal pad of fat, buccopharyngeal fascia, buccinator & buccal mucosa**
- **Opens into vestibule of mouth** opposite the **upper 2<sup>nd</sup> molar** in its **course**



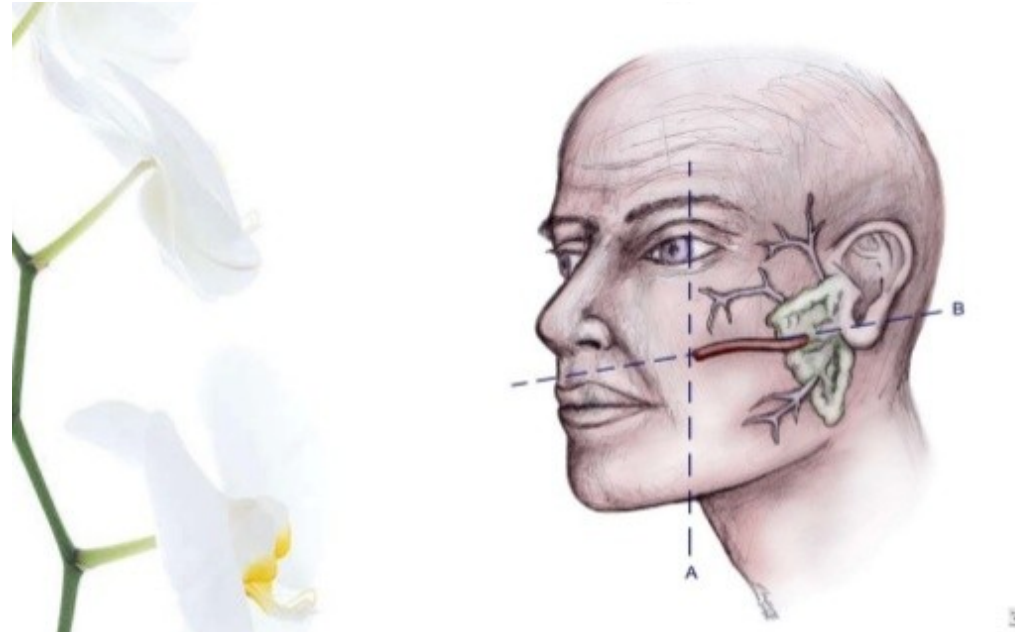
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# Parotid duct



## Surface anatomy of the parotid duct

- Represented by **middle  $\frac{1}{3}$**  of a line between **tragus** and a point midway **bet. ala of nose & upper lip**

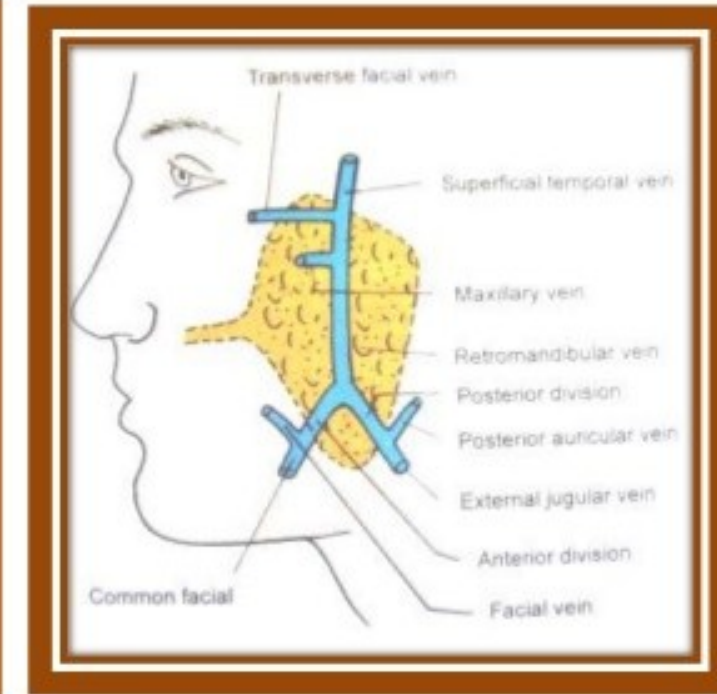
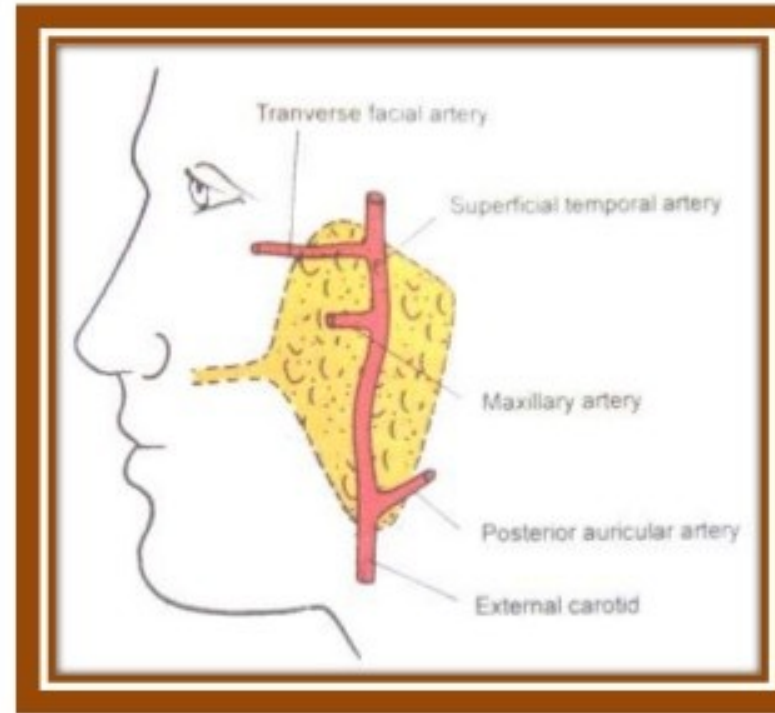


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# Supply of the gland



- **Arterial supply:** ECA
- **Venous drainage:** Retromandibular V
- **Lymph drainage:** Parotid then cervical LN

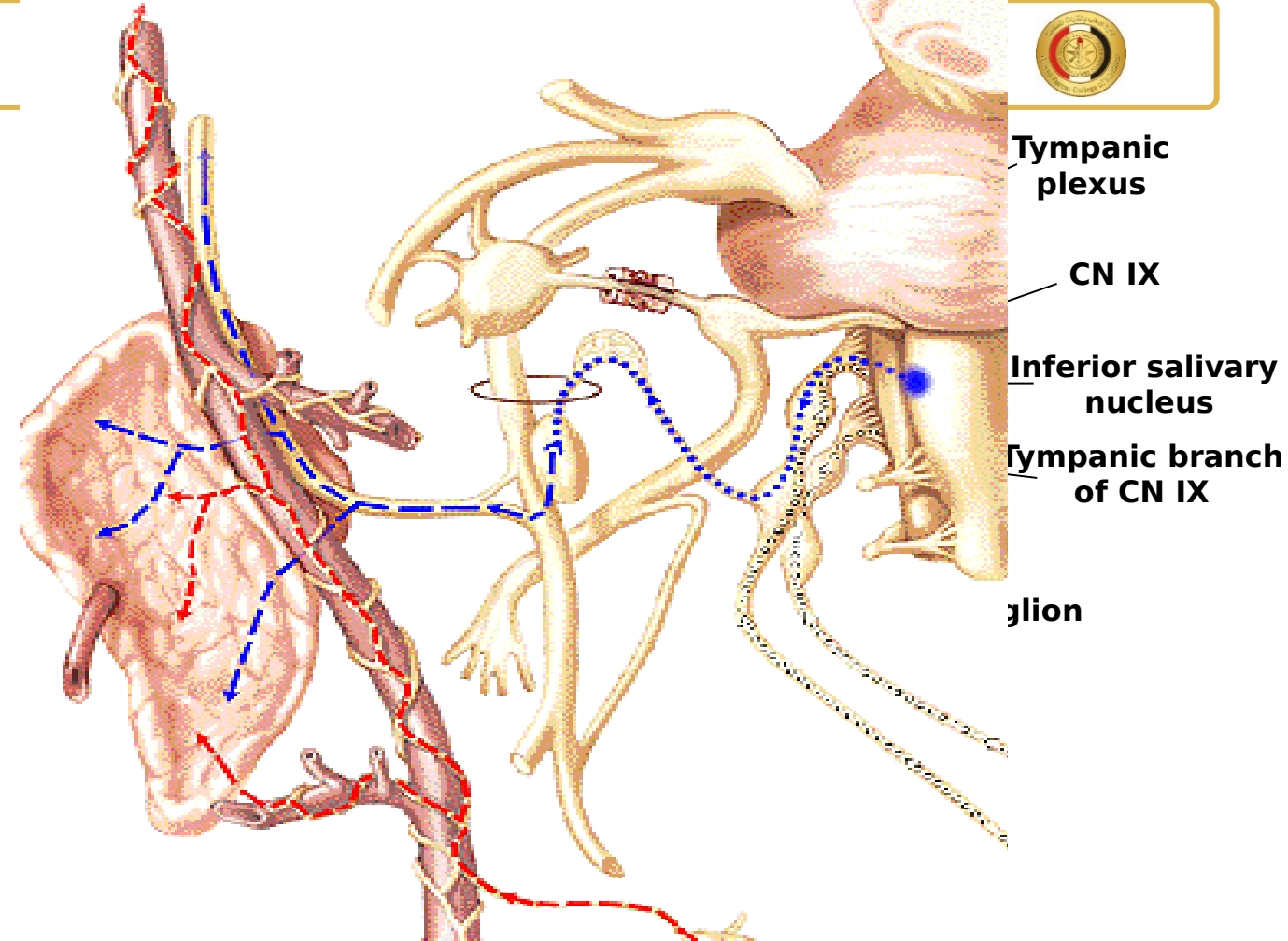


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# Supply of the gland

## Nerve supply:

- **Sensory:** auriculotemporal nerve
- **Sympathetic:** plexus around **ECA**
- **Parasympathetic:** postganglionic fibres from the **otic ganglion** carried by the **auriculotemporal nerve**



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**Preganglionic fibres** arise from the **inferior salivary nucleus** in the brain stem, run with **glossopharyngeal nerve**, then through its **tympanic branch** to join the **tympanic plexus**, fibres are then carried by the **lesser petrosal nerve** which leaves through the **foramen ovale** and terminates in the **otic ganglion**

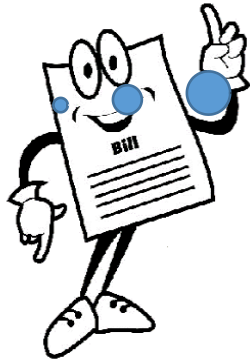


# Lecture Quiz



- Parotid duct opens in vestibule of mouth opposite
  - a) Upper 3<sup>rd</sup> molar
  - b) Upper 2<sup>nd</sup> molar
  - c) Upper premolar
  - d) Upper 1<sup>st</sup> molar

# Lecture Summary



## Parotid Gland

1. Describe position, shape, surfaces, borders and relations of parotid
2. Recognize structures inside parotid gland and their clinically related problems
3. Describe the course and site of opening of parotid duct
4. Discuss the nerve supply , blood supply and lymphatic drainage of parotid gland

## **SUGGESTED TEXTBOOKS**



1. Gray's Anatomy for Students-4th Edition

Atlas of human anatomy by Frank H. Netter, 6th Edition



Thank you!